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(51) International Patent Classification ⁶ : A41B 9/00, A61F 13/16, A41B 9/12	A1	(11) International Publication Number: WO 96/36248 (43) International Publication Date: 21 November 1996 (21.11.96)
(21) International Application Number: PCT/CA96/00284 (22) International Filing Date: 9 May 1996 (09.05.96) (30) Priority Data: 2,149,477 16 May 1995 (16.05.95) CA (71)(72) Applicants and Inventors: McMAHON-AYERST, Marilyn [CA/CA]; R.R. #2, Lunenburg, Ontario K0C 1R0 (CA). CLEMENT, Doreen [CA/CA]; R.R. #1, St. Andrews West, Ontario K0C 2A0 (CA). MALONEY-DAWSON, Brenda [CA/CA]; R.R. #2, Lunenburg, Ontario K0C 1R0 (CA).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: LEAKPROOF AND BREATHABLE UNDERGARMENTS AND SWIM WEAR (57) Abstract <p>In an undergarment known as or referred to as panties, briefs, or underwear, it is known to be usually worn underneath clothing for hygiene purposes. In a swimsuit or swim wear it is known to usually be worn for water and outdoor activities or anytime as the person deems it necessary as an outer garment. In this invention, we have woven into or laminated to the fabric, (all types of fabrics or nonwoven material) a laminate or substance which is leak proof, and breathable. This invention is designed with feminine care in mind, especially during the female menstrual cycle. It can also be used at any time by a person female or male who feel the need to wear a protective leak proof, breathable garment. All females have various menstrual cycles and flow at various rates and during the heavier flowing days, it is very stressful worrying if you are going to leak through the feminine menstrual product to your outer clothing. Females have to dress accordingly, i.e. wearing dark clothing, long shirts, or long sweaters, etc. in the event of seepage through to their outer garments; to help minimize the embarrassing situation. During sleeping it is almost impossible to prevent leakage onto garments and bedding. By wearing this ultimate wear called Finally (a leak proof breathable under garment or swim wear) it will prevent leakage, and it is breathable thereby allowing continued comfort.</p> <div></div>		

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LEAKPROOF AND BREATHABLE UNDERGARMENTS AND SWIM WEAR
Specification

"This invention is an protective garment to prevent leakage and is breathable, and will be worn as an undergarment panty or brief or underwear and in the swim wear it will be worn as an outer garment."

"This invention will be made from any fabric or nonwoven material which will have a laminate or substance woven into the fabric or nonwoven material will be laminated to the fabric or nonwoven material and each seam will be sealed to prevent leakage and ensure breathability. This invention will be made in all sizes, styles, and colours of feminine and masculine underwear, panties, briefs and swim wear.

Drawings

"In drawings which illustrate embodiments of the invention Figure 1 is a female full panty with the laminate or substance woven completely into the fabric or nonwoven material, with a cotton gusset, or other fabric gusset.

Figure 2 is a female bikini panty with the laminate or substance woven completely into the fabric or nonwoven material, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 3 is female panty which only the outer side of the panty is laminated with the substance or laminate, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 4 is double layer female panty with #1 woven or laminated with laminate or substance and #2 completely fabric or nonwoven material with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 5 is a full female swimsuit with the laminate or substance woven or laminated into the complete fabric or nonwoven material with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 6 is a full female swimsuit with the laminate or substance woven or laminated in the buttocks with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 7 is a female bikini with the complete suit with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 8 is a female bikini with the bottom portion with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 9 mens briefs with the complete brief with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 10 mens boxer with the complete boxer with laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 11 mens bikini with the complete brief with the laminate or substance woven or laminated, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 12 is a mens brief which is laminated with laminate or substance on the outer side only with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 13 is double layer mens brief with #1 woven or laminated with laminate or substance and #2 completely fabric with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 14 is a male swimsuit with the laminate or substance woven or laminated into the complete fabric with a cotton gusset, or other fabric or nonwoven material gusset.

We Claim

- Claim 1. A close fitting secondary garment to be worn over existing feminine protective means, said secondary garment selected from the group of panties,briefs, underwear or undergarments and outerwear such as swim wear, said garments fabricated as a laminate of an inner thin, lightly absorbent launderable material and an outer thin, launderable material that is LEAKPROOF and breathable whereby the wearer is protected from secondary flows of menstrual fluid from said existing feminine protection, by the inner lamination which absorbs any spots or light flows, and by the outer semipermeable membrane-type laminate which prevents any of the liquid of said secondary flow from striking through the secondary garment, while the vapour permeability of the semipermeable membrane allows fluid transfer across the secondary garment allowing the secondary flow to dry on the first said inner material whereby the wearer is protected by the entire garment from secondary flows of menstrual fluids.
- Claim 2. The garment of claim 1 wherein the inner and outer materials are bonded together by stitching or adhesives.
- Claim 3. The garment of claim 1 wherein the inner and outer materials are connected together only at their peripheries.

- Claim 4. The garment of claim 1, 2 or 3 wherein extra absorbency provided by an absorbent gusset in the crotch area.
- Claim 5. The garment of claim 4 wherein said gusset is detachable from the remainder of the garment.
- Claim 6. The garment of claims 1 to 3 or 5 wherein the secondary garment is made for non-woven material.
- Claim 7. The garment of claim 1 to 3 or 5 wherein the secondary garment is made from woven material.
- Claim 8. The garment of claim 4 wherein the secondary garment is made from woven material.
- Claim 9. The garment of claim 4 wherein the secondary garment is made form non-woven material.
- Claim 10. The garment of claims 8 or 9 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 11. The garment of claims 6 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 12. The garment of claim 7 wherein the seams of the secondary garment are sealed and liquid-proof.

Claim 13. The garment of claims 1 to 12 wherein the leakproof breathable material is a woven component of the fabric.

Claim 14. A close fitting secondary garment to be worn over existing feminine protective means, said secondary garment selected from the group of panties, briefs, underwear or undergarments and outerwear such as swim wear, said garments fabricated of a laminate lightly absorbent launderable material that is LEAKPROOF and breathable whereby the wearer is protected from secondary flows of menstrual fluid from said existing feminine protection, by the lamination which absorbs any spots or light flows, and the semipermeable membrane-type laminate which prevents any of the liquid of said secondary flow from striking through the secondary garment, while the vapour permeability of the semipermeable membrane allows fluid transfer across the secondary garment allowing the secondary flow to dry on the inside of the secondary garment whereby the wearer is protected by the entire garment from secondary flows of menstrual fluids.

Claim 15. The garment of claim 14 wherein the inner and outer materials are bonded together by stitching or adhesives.

Claim 16. The garment of claim 14 wherein the inner and outer materials are connected together only at their peripheries.

- Claim 17. The garment of claim 14, 15, or 16 wherein extra absorbency provided by an absorbent gusset in the crotch area.
- Claim 18. The garment of claim 17 wherein said gusset is detachable from the remainder of the garment.
- Claim 19. The garment of claims 14 to 16 or 18 wherein the secondary garment is made for non-woven material.
- Claim 20. The garment of claim 14 to 16 or 18 wherein the secondary garment is made from woven material.
- Claim 21. The garment of claim 17 wherein the secondary garment is made from woven material.
- Claim 22. The garment of claim 17 wherein the secondary garment is made form non-woven material.
- Claim 23. The garment of claims 21, or 22 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 24. The garment of claims 19 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 25. The garment of claim 20 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 26. The garment of claims 14 to 25 wherein the leakproof breathable material is a woven component of the fabric.

Figure 1



Figure 2



Figure 3

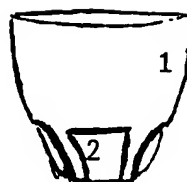
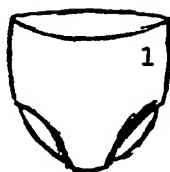


Figure 4



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Figure 5

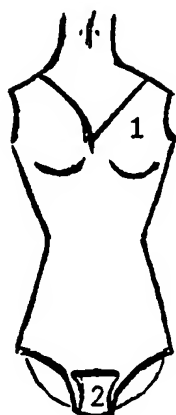


Figure 6

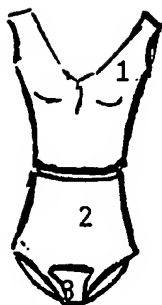


Figure 7

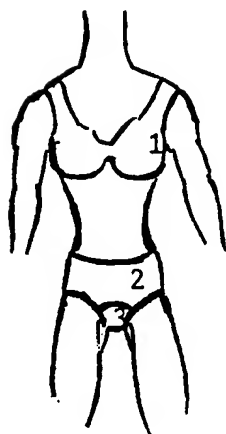


Figure 8

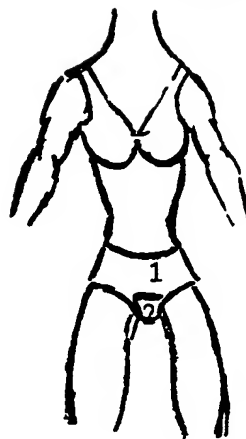


Figure 9

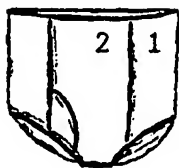


Figure 10

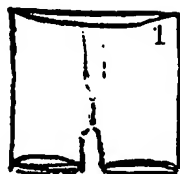


Figure 11



Figure 12

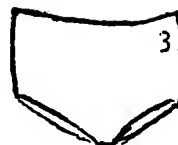
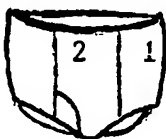
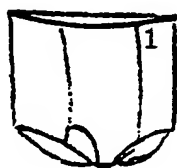
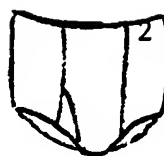


Figure 13



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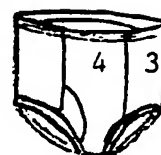
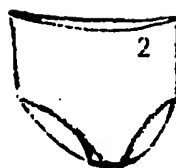
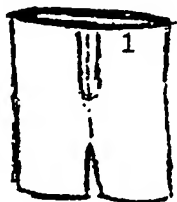


Figure 14



INTERNATIONAL SEARCH REPORT

Inter. Appl. No.

PCT/CA 96/00284

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A41B9/00 A61F13/16 A41B9/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A41B A61F A41D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,5 155 867 (NORVELL) 20 October 1992 see column 1, line 47-54 see column 2, line 19-31 see column 3, line 17 - column 4, line 10; figures 1,2	1,2,14, 15
Y	US,A,4 194 041 (GORE ET AL.) 18 March 1980 see column 2, line 25-44 see column 3, line 5-16; claims 1,5,6	1-26
Y	US,A,5 098 419 (GOLD) 24 March 1992 see column 3, line 36-44 see column 4, line 25-37; claims 1,4-7	1-26
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

12 September 1996

Date of mailing of the international search report

30.09.96

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 327 823 (DARLINGTON FABRICS) 16 August 1989	1,2,4,5
X	see column 1, line 23 - column 2, line 13 see column 3, line 16 - column 4, line 1	14,15, 17,18
A	--- US,A,4 813 950 (BRANCH) 21 March 1989 see column 2, line 61 - column 3, line 38	1-3,14, 16
A	--- DE,U,93 16 248 (BÜTOW ET AL.) 27 January 1994 see page 2, line 10 - page 3, line 14	1,14
A	--- EP,A,0 627 177 (INTELPRO) 7 December 1994 see abstract	1,14
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Information on patent family members

International Application No

PCT/CA 96/00284

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WO-A-9212648	06-08-92	NONE	

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(54) Title: LEAKPROOF AND BREATHABLE UNDERGARMENTS AND SWIM WEAR (57) Abstract <p>In an undergarment known as or referred to as panties, briefs, or underwear, it is known to be usually worn underneath clothing for hygiene purposes. In a swimsuit or swim wear it is known to usually be worn for water and outdoor activities or anytime as the person deems it necessary as an outer garment. In this invention, we have woven into or laminated to the fabric, (all types of fabrics or nonwoven material) a laminate or substance which is leak proof, and breathable. This invention is designed with feminine care in mind, especially during the female menstrual cycle. It can also be used at any time by a person female or male who feel the need to wear a protective leak proof, breathable garment. All females have various menstrual cycles and flow at various rates and during the heavier flowing days, it is very stressful worrying if you are going to leak through the feminine menstrual product to your outer clothing. Females have to dress accordingly, i.e. wearing dark clothing, long shirts, or long sweaters, etc. in the event of seepage through to their outer garments; to help minimize the embarrassing situation. During sleeping it is almost impossible to prevent leakage onto garments and bedding. By wearing this ultimate wear called Finally (a leak proof breathable under garment or swim wear) it will prevent leakage, and it is breathable thereby allowing continued comfort.</p> <div></div>		

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AMENDED CLAIMS

[received by the International Bureau on 29 November 1996 (29.11.96);
original claims 1-26 replaced by new claims 1-18 (5 pages)]

1. A close fitting secondary garment to be worn over
existing feminine protective means, said secondary garment
selected from the group of panties, briefs, underwear or
undergarments and outerwear such as swim wear, said
5 garment being fabricated of a lamination of an inner thin,
launderable material and an outer thin lamina of
launderable material, characterized by said inner material
being lightly absorbent and said outer lamina being
leakproof and breathable whereby the wearer is protected
10 from secondary flows of menstrual fluid from said existing
feminine protection by the inner material which absorbs
any spots or light flows and by the outer lamina forming a
semipermeable membrane material which prevents any of the
liquid of said secondary flow from striking through the
15 secondary garment while vapour permeability of the
semipermeable membrane material permits vapour transfer
across the secondary garment thus allowing the secondary
flows to dry on the first said inner material whereby the
wearer is protected by the entire garment from secondary
20 flows of menstrual fluids.

2. A close fitting hygienic garment, said garment
selected from the group of panties, briefs, underwear or
undergarments and outerwear, such as swim wear, said
25 garment being fabricated as a lamination of a thin inner
lamina and a thin outer lamina; characterized by said

inner lamina being of lightly absorbent material and said
outer lamina being liquid impermeable and of breathable
material, the wearer being protected from leakage of body
5 fluids by the inner lamina which absorbs any spots or
light flows and by the outer liquid impermeable lamina
which prevents any of the liquid of said flows from
striking through said garment, while the breathable
material of said outer lamina allows vapour transfer
10 across the garment resulting in dehydration of the said
flows absorbed in said inner lamina whereby the wearer is
protected by the entire garment from flows of body fluids.

3. A hygienic protective garment including a body
15 conforming, lower torso portion for preventing leakage of
body waste liquids, said lower torso portion being defined
by sheet material and including a crotch area disposed
between a pair of leg openings, characterized by said
sheet material consisting of only two layers, a first of
20 said layers being liquid permeable and a second of said
layers being liquid impermeable and vapour permeable, at
least one of said first and second layers forming said
lower torso portion above said crotch area as well, said
first layer providing an inner lamina fully occupying at
25 least said crotch area for allowing passage of said
liquids into said inner lamina, said second layer
providing an outer lamina fully occupying at least said
crotch area and being juxtaposed said first layer in said
crotch area for preventing strike through to the exterior

of the garment of said liquids from said inner lamina.

4. A garment as defined in claim 3, characterized by
5 said first layer being air permeable.

5. A garment as defined in claim 1, 2, 3 or 4,
characterized by said inner and outer laminae being bonded
together by stitching or adhesive.

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6. A garment as defined in claim 1, 2, 3 or 4,
characterized by said inner and outer lamina being
connected together only at peripheries thereof.

15 7. A garment as defined in claim 1, characterized by
said inner lamina being formed by a gusset member in the
crotch area.

8. A garment as defined in claim 2, characterized by
20 said inner lamina being formed by a gusset member in the
crotch area.

9. A garment as defined in claim 3, characterized by
said inner lamina being formed by a gusset member in the
25 crotch area.

10. A garment as defined in claim 1, 2, 3 or 4,
characterized by said outer lamina being formed by a
gusset member.

11. A garment as defined by claim 1, characterized by an additional inner gusset member of absorbent material in the crotch area.

5

12. A garment as defined in claim 2, characterized by an additional inner gusset of absorbent material in the crotch area.

10 13. A garment as defined in claim 7, 8, 9, 11 or 12, characterized by said gusset member being detachable from the remainder of said garment.

14. A garment as defined in claim 1, 2, 3, 4, 7, 8, 9, 11
15 or 12, characterized by said inner lamina being formed of a non-woven material.

15. A garment as defined in claim 1, 2, 3, 4, 7, 8, 9, 11
or 12, characterized by said outer lamina being formed of
20 a non-woven material.

16. A garment as defined in claim 1, 2, 3, 4, 7, 8, 9, 11
or 12, characterized by said inner lamina being formed of
a woven material.

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17. A garment as defined in claim 1, 2, 3, 4, 7, 8, 9, 11
or 12, characterized by said outer lamina being formed of
a woven material.

18. A garment as defined in claim 1, 2, 3, 4, 7, 8, 9, 11
or 12, characterized by said inner and outer laminae being
5 assembled into said garment by seams, said seams being
sealed and liquid-proof.

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STATEMENT UNDER ARTICLE 19

Claim 1 is being amended to more clearly define the present invention and to place it in the form described under paragraph 111 of the PCT Applicant's Guide. As amended, it is believed the claim defines in more specific terms the features providing for a close fitting garment which, due to the sheet material in the crotch area consisting of the two specified types of material, is capable of preventing strike through of light flows, but forms an inconspicuous and comfortable garment.

Independent Claim 2, which is an amended form of previous Claim 14 now uses terminology more similar to independent claim 1, but is not directed to a garment which is restricted to a feminine protective means to be worn over existing feminine protective wear for preventing flows of menstrual fluids. It is clear from the disclosure of the invention as a whole in the initially filed application that the product's use was not meant to be so restricted.

New independent Claim 3 and dependent claim 4 have been drafted, to define in definite terms the relationship of the laminae forming the sheet material in the crotch area and their function in preventing strike through of body liquids, but to generally utilize less functional terminology. On the other hand, these new claims more clearly bring out the relationship of the laminated crotch area to the remainder of the garment and specifically call for the crotch area consisting of only the two layers.

The remaining dependent claims include minor modifications to place them in proper form for prosecution in this application and to make maximum use of multi-dependency.